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(0.13 mm), and

*(g) a third ambient-temperature-attachable pressure sensitive adhesive layer;
wherein said pressure sensitive adhesive layers are comprised of pressure sensitive adhesive
having a shear storage modulus measured at 22°C in the range of about 0.20 MPa to 0.50 MPa.*

Cont
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Please add new claims 28-30, which read as follows:

28. (New) The laminate of claim 1, wherein the laminate comprises an optically clear laminate.

29. (New) The glazing element of claim 9, wherein the glazing element comprises an optically clear glazing element.

30. (New) The laminate of claim 12, wherein the laminate comprises an optically clear laminate.

Remarks

In the Office Action, claims 1-5, 7, 8, 12, 13, 15-17 and 24-26 were rejected under § 102(b) as being anticipated by U.S. Patent No. 5,118,540 to Hutchison; claims 1-5, 7, 8, 12, 13, 15-17 and 24-26 were rejected under § 102(b) as being anticipated by U.S. Patent No. 5,645,940 to Teddington, Jr.; claim 6 was rejected under § 103 as being unpatentable over the '540 patent or the '940 patent in view of U.S. Patent No. 5,677,050 to Bilkadi et al.; and claims 9-11, 14 and 18-27 were rejected under § 103 as being unpatentable over the '540 patent or the '940 patent in view of U.S. Patent No. 6,013,722 to Yang et al.

Independent claims 1, 9 and 24 recite "a scratch-resistant hard coating," while remaining independent claim 12 recites "a scratch-resistant hard coat comprised of cured ceramer." The Hutchison patent discloses a "protective fluorocarbon film 160," see column 6, lines 56-65. It is submitted that a fluorocarbon film does not comprise a "hard" coat or coating. It is also noted that Hutchison teaches applying a "temporary layer of premask film 170" to protect "the exposed surface of the fluorocarbon film 160 during shipping and during handling while the flexible reflective film 100 is being applied to a surface," see column 6, lines 17-21; hence, indicating

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that the film 160 is not "hard." Accordingly, it is submitted that claims 1-5, 7, 8, 12, 13, 15-17 and 24-26 are not anticipated by the Hutchison patent.

With regard to claim 6, the Bilkadi et al. patent has been applied in combination with the Hutchison patent. The Office Action indicates that Bilkadi et al. teach a hard coating comprising a cured ceramer. While the Bilkadi et al. patent does disclose a retroreflective sheeting including a cured ceramer layer, nowhere does it suggest substituting a cured ceramer layer for a fluorocarbon film forming part of a flexible film for use in solar energy applications.

Accordingly, it is submitted that the Hutchison patent and the Bilkadi et al. patent, whether taken singly or in combination, do not disclose, teach or suggest the subject matter set out in claim 6.

U.S. Patent No. 6,013,722 to Yang et al. has been applied in combination with the Hutchison patent against claims 9-11, 14 and 18-27. However, Yang et al. do not disclose, teach or suggest providing a hard coat or coating on a lamina surface. As discussed above, Hutchison also fails to teach or suggest this aspect of the present invention. Accordingly, it is submitted that the Hutchison patent and the Yang et al. patent, whether taken singly or in combination, do not disclose, teach or suggest providing a laminate or element comprising a first lamina having a hard coat or coating, as recited in claims 9-11, 14 and 18-27.

In each of independent claims 1, 9 and 24, the laminating adhesive for directly bonding the laminae together comprises a sufficient number of pressure sensitive adhesive layers. Claim 12 recites first and second pressure sensitive adhesive layers, which layers are positioned between first, second and third films. A pressure sensitive adhesive is a preferred "laminating adhesive" because it deforms or gives under impact so as to permit the laminae to move relative to one another without tearing. Other adhesives, such as heat activated adhesives, are typically less likely to deform under impact resulting in the laminae tearing. Teddington, Jr. discloses that plies 21-24 "may include interleaved clear adhesive layers (not shown)," see column 5, lines 47-49. However, nowhere does Teddington, Jr. disclose, teach or suggest that those layers may comprise pressure sensitive adhesive layers. As noted above, the Yang et al. patent has been applied in combination with the Teddington, Jr. patent against claims 9-11, 14 and 18-27. However, Yang et al. do not disclose, teach or suggest providing one or more pressure sensitive adhesive layers for bonding together laminae or film layers. Nor does Bilkadi et al. disclose,

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teach or suggest this feature of the present invention. It is noted that a single layer of pressure sensitive adhesive is taught by Yang et al. for bonding a film to a glass slide, see column 7, lines 54-67.

Accordingly, for the reasons set out above, it is submitted that the Teddington, Jr. patent, the Bilkadi et al. patent and the Yang et al. patent, whether taken singly or in combination, do not disclose teach or suggest the subject matter set out in claims 1-27.

It is submitted that claim 24 recites additional limitations, which further distinguish that claim from the applied prior art. In particular, claim 24 recites “[a]n optically clear laminate” and “wherein the laminate exhibits a light transmittance of at least about 75%.” In the Hutchison patent, a layer of silver 140 is vapor deposited on a support sheet 130 or adhesive layer 150, 154, see column 5, lines 25-27, and column 6, lines 29 and 30. It is noted that Hutchison teaches in column 7, lines 61-65, “[o]n the smooth surface of the polyester film is then vapor-deposited approximately 1,000-1,500 nanometers *** of silver to provide an opaque specularly reflective metallic surface.” Hence, the Hutchison patent does not disclose, teach or suggest providing an “optically clear laminate,” which “laminate exhibits a light transmittance of at least about 75%,” as recited in independent claim 24. The Bilkadi et al. and the Yang et al. patents also fail to disclose, teach or suggest this aspect of the present invention.

The Teddington, Jr. patent discloses a coating layer 19 which “preferably includes a reflective ply or layer 22 which comprises a polyester ply with a metallized surface,” see column 4, line 66 through column 5, line 1. It is noted in column 5, lines 12-15, “[r]eflective ply 22 provides for thermal insulation by reducing solar gain or transmission through shatter resistant glass 14, while still providing optical transparency.” It is submitted, however, that the Teddington, Jr. patent does not disclose, teach or suggest providing an “optically clear laminate,” which “laminate exhibits a light transmittance of at least about 75%,” as recited in independent claim 24. As noted above, the Bilkadi et al. and the Yang et al. patents also fail to disclose, teach or suggest this aspect of the present invention.

It is submitted that claims 8 and 11 recite additional limitations which further distinguish those claims patentably from the applied prior art. Nowhere does the prior art disclose, teach or suggest providing pressure sensitive adhesive layers having a shear storage modulus measured at

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22°C in the range of about 0.20 Mpa to about 0.50 Mpa. Accordingly, it is submitted that claims 8 and 11 define patentable invention over the prior art.

It is also submitted that there are other limitations recited in the claims, in addition to those discussed above, which further distinguish the claimed invention patentably from the cited art and the other art of record. These additional distinguishing limitations will not be discussed because there is no need to do so at this time. Accordingly, it is submitted that all prior art rejections should be withdrawn and the case allowed.

With this Amendment, new claims 28-30 have been added. It is submitted that these claims also define patentable invention.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

In view of the above remarks, applicant submits that claims 1-30 define patentably over the prior art. Early notification of allowable subject matter is respectfully requested.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Claims 1, 9, and 12 have been amended as follows:

1. (Thrice-Amended) [An optically clear] A laminate suited for attachment to window glass to provide a glazing element which has reduced spall and lacerative consequences on impact fracture of the window glass; said laminate comprising:

(a) a first lamina comprised of optically clear flexible nonadhesive polymeric material having a first major surface and an opposite second major surface;

(b) a scratch-resistant hard coating over said first major surface to provide an exposed surface to the laminate;

(c) at least one additional lamina comprised of optically clear flexible nonadhesive polymeric material;

(d) a sufficient number of layers of in situ optically clear pressure sensitive adhesive layers to directly bond said laminae together with the hard coating exposed; and

(e) a layer of in situ optically clear ambient temperature attachable pressure sensitive adhesive to bond said laminate to window glass.

9. (Twice-Amended) [An optically clear] A glazing element which has reduced spall and lacerative consequences on impact fracture; said glazing element comprising:

(a) a first lamina comprised of optically clear flexible polymeric material having a first major surface and an opposite second major surface;

(b) a scratch-resistant hard coating over said first major surface;

(c) at least one additional lamina comprised of optically clear flexible nonadhesive polymeric material;

(d) a sufficient number of layers of in situ optically clear pressure sensitive adhesive layers to directly bond said laminae together with the hard coating exposed;

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(e) a layer of in situ optically clear ambient temperature attachable pressure sensitive adhesive to bond said laminate to window glass, wherein said attachable pressure sensitive adhesive comprises a cross linker solution; and
(f) window glass.

12. (Thrice-Amended) [An optically clear] A laminate comprising the following components adhered together in the following order:

- (a) a scratch-resistant hard coat comprised of cured ceramer;
- (b) a first biaxially oriented polyester film having a thickness of not more than 5 mils (0.13 mm);
- (c) a first pressure sensitive adhesive layer;
- (d) a second biaxially oriented polyester film having a thickness of not more than 5 mils (0.13 mm);
- (e) a second pressure sensitive adhesive layer;
- (f) a third biaxially oriented polyester film having a thickness of not more than 5 mils (0.13 mm); and
- (g) a third ambient-temperature-attachable pressure sensitive adhesive layer; wherein said pressure sensitive adhesive layers are comprised of pressure sensitive adhesive having a shear storage modulus measured at 22°C in the range of about 0.20 MPa to 0.50 MPa.